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09/991,079	11/16/2001	Valery Tsourikov	IMC-0043	4738

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/991,079	TSOURIKOV ET AL.	
	Examiner	Art Unit	
	LAMONT M. SPOONER	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-11 and 13-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *3,4,14 and 15* is/are allowed.

6)☒ Claim(s) *2,8,11,13 and 20-22* is/are rejected.

7)☐ Claim(s) *5-7,9,10 and 16-19* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *16 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Introduction

1. This office action is in response to applicant's arguments filed 9/02/2010. Claims 2-11, and 13-22 are currently pending and have been examined.

Response to Arguments

2. Applicant's arguments, see remarks, filed 9/2/10, with respect to the rejections of claims and 1, 3, and 12 and under 35 USC 102(e), the 35 USC 112, second paragraph of claim 3, and the 35 USC rejections of claims 1, 11, 12 and 20 have been fully considered and are persuasive. The above rejections have been withdrawn.

3. Applicant's arguments filed 9/02/2010 have been fully considered but they are not persuasive. More specifically, applicant's arguments regarding claims 21 and 22, regarding, "With regard to new independent claim 21, Applicant has cast the problem statement generator differently from prior claim 1, but still in a manner consistent with the present application. In particular, Applicant describes a problem statement as a partially complete S-A-O, where an "X" indicates the semantic elements missing. For Tsourikov to anticipate the claimed problem statement generator it would

have to provide an enabling disclosure of determining a problem statement in the S-A-O format - where at least one of the S, A, or O is missing. Tsourikov does not provide an enabling disclosure of the foregoing. In fact, Tsourikov does not teach a problem statement of any kind." However, the Examiner cannot concur, wherein Tsourikov explicitly teaches in Fig. 13, his Subject, Action, Object, wherein his subject explicitly is in the form of X-A-O, wherein his absence of the subject is interpreted as the "X", wherein it is explicit that in the structure the subject is missing.

4. Applicant further argues, "In claim 21, it is explicitly indicated that the knowledge base search is not a keyword search (as in Tsourikov). In the Background section of the present application, the Applicant discussed the drawbacks of prior art keyword searching and matching approaches. (Application, p. 2 para. 1 to p. 3 para. 2) Applicant then discussed the "need for a system that does not rely on pre-stored key wor[d] matching..." (Application, p. 3 para. 2 to p. 3 para. 1) The Applicant then went on throughout the application to describe an approach that relied on semantic analysis instead of keywords.

In contrast, Tsourikov explicitly does use a keyword approach. Tsourikov uses some semantic analysis to determine the keywords. But

Tsourikov uses those keywords as the basis of its document retrieval search. Since claim 21 explicitly requires a non- keyword query and Tsourikov explicitly teaches a keyword search approach, Tsourikov does not provide an enabling disclosure of this aspect of claim 21."

However, it appears the applicant is attributing the generation of the database of documents with a keyword search, which is NOT part of the non-keyword search of his SAO structured database. It is noted, that in C.6 lines 23-40, Tsourikov teaches a keyword search of documents, however, these documents are then further analyzed and a SAO structure is generated for these candidate documents, and then there is a non-keyword, SAO search/query of this database of SAO structures, thus entirely anticipating the applicant's currently amended claims. The keyword search is an additional element that is used in generating a database of documents, but is not precluded by any limitation as presented by the applicant. Therefore, applicant's arguments regarding newly added claim 21 and corresponding similar arguments regarding newly added claim 22, and claims inheriting the arguments, claims 2, 8, 11, 13, 22, 20 are unpersuasive.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claim 21, 2, 8, 11, 13, 20 and 22 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsourikov et al. (US 6,167,370).

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

As per **claim 21**, A semantic answering system (Fig. 1 item 10-as his system) that returns natural language answers in an S-A-O (subject-action-object) format in response to a natural language question, wherein the S-A-

O format represents semantic relationships between the S, A, and O elements, the system comprising(C.5 lines 60-64-his user natural language request-his request as his query/question, C7 lines 1-8-his solutions as answers):

a problem statement generator that processes the natural language question (C.5 lines 60-67-his user natural language request, C.5 line 55-C.6 line 22-his System 10 Unit 4-processing the request into request SAO structures, to be further used for searching, as his problem statement generator, Fig. 1 item 10-his user apparatus for entering the information, C.5 lines 60-62-his user input device) to extract a problem statement in a format X-A-O, S-A-X, S-X-O, or S-X-X, wherein S, A, and 0 are semantic elements in the natural language question, X indicates absence of an S, A, or O (ibid-his problem statement is generated by the system without user intervention discussion, taken/interpreted as automatically, C.5 line 60-C.6 line 22-his user input and generation of s-a-o query structure based on his search of candidate documents, his action-object generation without subject as a problem statement, Fig. 13, his Subject, Action, Object, wherein his subject explicitly is in the form of X-A-O, wherein his absence

of the subject is interpreted as the "X", wherein it is explicit that in the structure the subject is missing);

a knowledge base comprising an answer database including a set of answer S-A- 0s (Fig. 3 item 18-his DB of SAO structures, displayable to user) and, for each answer S-A-O, a link to a source document (C.6 lines 45-51-his link to full sentences/documents corresponding to the answer);

a semantic server configured to perform a non-keyword query of the knowledge base using the semantic elements and semantic relationships from the problem statement to find at least one answer S-A-O (Fig. 2, his web to system, item 10, his local DB as the knowledge base, C.6 lines 23-40, Tsourikov teaches a keyword search of documents, however, these documents are then further analyzed and a SAO structure is generated for these candidate documents, and then there is a non-keyword, SAO search/query of this database of SAO structures), wherein the at least one answer S-A-O includes the A and O, S and A, S and O, or S from the problem statement and an S, A, or 0 to replace each X in the problem statement, thereby completing the S-A-O format (Fig. 3 item 20-his comparison of SAO of user request/query and SAO of candidate documents, C.6 lines 23-44-his “request SAO structures are compared with

candidate the candidate document SAO structures", and his matches in document as answer elements in both problem statement and candidate document SAO's in knowledge base, present SAO answers, thus, any X, or missing element is replaces with an explicit SAO answer); and

a communication device configured to output the at least one answer S-A-0 to a computer (C.6 lines 37-51-his relevant document stored for display “as user desires" and page number linking to full sentences/documents corresponding to the answer as his active link, see also Fig. 3 his “displaying to user”, and displaying the reference to the user if marked relevant, therefore, an inherent link to the document wherein the user is able to reach the relevant document, by the systems provided information, C.6 line 45-67-his SAO for display).

As per **claim 2**, Tsourikov teaches a system as set forth in claim 21. Tsourikov further teaches wherein said server is configured to conduct a search a search of the World Wide Web, (C.6 lines 23-37-his web search, Fig. 2 item 10-his semantic processor system as server communicating with Web) identify documents that include new answer S-A-O's each comprising query elements in the problem statement, (Fig. 2 his "web" data search for documents, C.6 lines 23-37-for S-A-O's, each of these SAO’s in

the candidate documents are new SAO's for the candidate documents, as his description does not teach the SAO's as being stored in the knowledge base before the Web is searched) store links to such documents, (C.6 lines 45-51-his page number linking to full sentences/documents corresponding to the answer as his active link, see also Fig. 3 his "displaying to user", and displaying the reference to the user if marked relevant) and add such new answer S-A-O's to the knowledge base (C.6 lines 23-44-all new S-A-O's are added/stored in S-A-O DB).

As per **claim 8**, Tsourikov teaches a system as set forth in claim 21. Tsourikov further teaches wherein said user apparatus includes a user digital computer for generating said problem statement and receiving said at least one answer S-A-O (Fig. 1, item 12, as applied to claim 1-display answer and generating problem statement discussion).

As per **claim 11**, Tsourikov teaches system as set forth in claim 21, wherein each of the at least one answer S-A-Os is represented in a sentence format (C.6 lines 45-51-his output sentence including SAO).

As per **claim 13**, Tsourikov teaches a method as set forth in claim 22. Tsourikov further teaches searching the World Wide Web (C.6 lines 23-37-his web search, Fig. 2 item 10-his semantic processor system as server

communicating with Web), identifying documents that include new answer S-A-O's each comprising query elements in the problem statement (Fig. 2 his "web" data search for documents, C.6 lines 23-37-for S-A-O's, each of these SAO's in the candidate documents are new SAO's for the candidate documents, as his description does not teach the SAO's as being stored in the knowledge base before the Web is searched), storing links to such documents (C.6 lines 45-51-his page number linking to full sentences/documents corresponding to the answer as his active link, see also Fig. 3 his "displaying to user", and displaying the reference to the user if marked relevant), and adding such new answer S-A-O's to the knowledge base (C.6 lines 23-44-all new S-A-O's are added/stored in S-A-O DB).

As per **claim 20**, Tsourikov teaches a method of providing one or more solutions in response to a user query, the method comprising:

providing a knowledge base of semantically and automatically processed information including a set of answers in an S-A-O's (subject-action-object) format (Fig. 3 item 18-his DB of SAO structures, displayable to user, Fig. 3 items 10, 14-his semantic processor including analysis of information, and D of SAO-structures, C.4 lines 27-55-his automatic processing after user entry of request, each analysis process done

automatically without user intervention), and further comprising active links to documents corresponding to the set of answers (see corresponding limitation in claim 12, Fig. 3 item 18-his DB of SAO structures, displayable to user, C.6 lines 37-51-his relevant document stored for display “as user desires" and page number linking to full sentences/documents corresponding to the answer as his active link, see also Fig. 3 his “displaying to user”, and displaying the reference to the user if marked relevant, therefore, an inherent link to the document wherein the user is able to reach the relevant document, by the systems provided information;

processing a natural language user query at a user device, including generating a problem statement in the form A-O, S-A, S-X-O or S from the natural language user query (C.5 line 60-C.6 line 22-his user input and generation of s-a-o query structure based on his search of candidate documents, his action-object generation without subject as a problem statement), where S, A and 0 are query elements in the natural language query and X indicates absence of a query element (ibid-his request/query including elements extracted from his natural language request), converting the problem statement into a URL query (C.6 lines 22-26-his conversion of the query, and sending of the query to search the web, wherein, there is an

inherent URL query generated necessary to search the web documents), and sending the URL query to a semantic server having access to the knowledge base (Fig. 2 items 10, 14, 18-his semantic processor system 10 as his server to user/knowledge base communication, the query sent to his web, C.6 lines 23-44-wherein the problem statements as a URL query contain the S, A, O of the query elements from the natural language query and must search the knowledge base of S-A-O for matching SAO).

generating a non-keyword (see claim 21, non-keyword query discussion) knowledge base query from the URL query at the semantic server and searching the knowledge base using the semantic elements and semantic relationships from the problem statement (C.6 lines 23-45-his web created knowledge base of documents from the web “identifies candidate documents and stores them” as his knowledge base, now being searched based on the URL query “his web search” from the semantic server, see above semantic server discussion, being queried from the generated user request directed to the web, his SAO is extracted from the documents and then matched for SAO), to find one or more answer S-A-O, wherein the one or more answer S-A-O includes the A and O, S and A, S and O, or S from the problem statement and an S, A, or O to replace each

X in the problem statement, thereby completing the S-A-O format (Fig. 3 item 20-his comparison of SAO of user request/query and SAO of candidate documents, C.6 lines 23-44-his “request SAO structures are compared with candidate the candidate document SAO structures", and his matches in document as answer elements in both problem statement and candidate document SAO's in knowledge base, present SAO answers, thus, any X, or missing element is replaces with an explicit SAO answer),

and if the one or more answer S-A-O is found , converting the one or more answer S-A-O into at least one HTML page and sending the at least one HTML page to the user device (C.6 lines 40-51-his display of the reference document, and based on match SAO, to the user as being transmitted by the Web, which communicates in HTML); and

processing the at least one HTML page at the user device to output the one or more answer S-A-O to the user query (C.6 lines 40-51-his display of the reference document containing the S-A-O solutions to the user, the document being obtained from the Web, and presented to the user).

As per **claim 22**, in a digital computing system (Fig. 1 item 10-as his digital system), a semantic answering method that returns natural language

answers in an S-A-O (subject-action-object) format in response to a natural language question, wherein the S-A-O format represents semantic relationships between the S, A, and O elements, the method comprising (C.5 lines 60-64-his user natural language request-his request as his query/question, C7 lines 1-8-his solutions as answers):

processing the natural language question to extract a problem statement (C.5 lines 60-67-his user natural language request, C.5 line 55-C.6 line 22-his System 10 Unit 4-processing the request into request SAO structures, to be further used for searching, as his problem statement generator, Fig. 1 item 10-his user apparatus for entering the information, C.5 lines 60-62-his user input device) in a format X-A-O, S-A-X, S-X-O, or S-X-X, wherein S, A, and O are semantic elements in the natural language question, X indicates absence of an S, A, or O (ibid-his problem statement is generated by the system without user intervention discussion, taken/interpreted as automatically, C.5 line 60-C.6 line 22-his user input and generation of s-a-o query structure based on his search of candidate documents, his action-object generation without subject as a problem statement, Fig. 13, his Subject, Action, Object, wherein his subject explicitly

is in the form of X-A-O, wherein his absence of the subject is interpreted as the "X", wherein it is explicit that in the structure the subject is missing);

providing a knowledge base comprising an answer database including a set of answer S-A-Os and, for each answer S-A-O, a link to a source document (Fig. 3 item 18-his DB of SAO structures, displayable to user, and C.6 lines 45-51-his link to full sentences/documents corresponding to the answer);

performing a non-keyword query of the knowledge base using the semantic elements and semantic relationships from the problem statement to find at least one answer S-A-O (Fig. 2, his web to system, item 10, his local DB as the knowledge base, C.6 lines 23-40, Tsourikov teaches a keyword search of documents, however, these documents are then further analyzed and a SAO structure is generated for these candidate documents, and then there is a non-keyword, SAO search/query of this database of SAO structures), wherein the at least one answer S-A-O includes the A and O, S and A, S and O, or S from the problem statement and an S, A, or O to replace each X in the problem statement, thereby completing the S-A-O format (Fig. 3 item 20-his comparison of SAO of user request/query and SAO of candidate documents, C.6 lines 23-44-his “request SAO structures

are compared with candidate the candidate document SAO structures", and his matches in document as answer elements in both problem statement and candidate document SAO's in knowledge base, present SAO answers, thus, any X, or missing element is replaces with an explicit SAO answer); and

outputting the at least one answer S-A-O to a computer (C.6 lines 37-51-his relevant document stored for display “as user desires" and page number linking to full sentences/documents corresponding to the answer as his active link, see also Fig. 3 his “displaying to user”, and displaying the reference to the user if marked relevant, therefore, an inherent link to the document wherein the user is able to reach the relevant document, by the systems provided information, C.6 line 45-67-his SAO for display).

Allowable Subject Matter

7. Claims 3, 4, 14 and 15 are allowed.

8. Claims 5-7, 9, 10, and 16-19, respectively are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAMONT M. SPOONER whose telephone number is (571)272-7613. The examiner can normally be reached on 8:00 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571/272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David R Hudspeth/
Supervisory Patent Examiner, Art Unit 2626

lms
9/27/10